

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2, 4, 6, 7, 11, 12, 15-17, 19, 20, 24, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6600933) in view of Ohashi (US 5799245) and Eastmond et al. (US 6088337).

4. Regarding Claims 1 and 16, Hiramatsu et al. discloses a antenna selection system including transmitting a data block through a first one of a plurality of sequentially selected antennas (Col. 1, Lines 25-30, Fig. 1), receiving a first signal indicating through a check that an error occurred during transmission or reception of the data block (Col. 6, Lines 41-54), interrupting sequential selection of the plurality of

antennas to select a second one of the plurality of antennas in response to the first error signal and retransmitting the data block through the second one of the plurality of antennas (base station performs antenna change control, Col. 6, Lines 41-54), however Hiramatsu et al. fails to disclose the data block is retransmitted in consecutive sequence with an additional data block initially transmitted by the second one of the plurality of antennas; resuming sequential selection of the plurality of antennas after the data block is retransmitted through the second one of the plurality of antennas and transmitting additional data blocks through the sequentially selected antennas.

5. In an analogous art, Ohashi discloses a data block is retransmitted in consecutive sequence with an additional data block initially transmitted by the second one of the plurality of antennas (data transmitted and retransmission needed and antennas switched, Col. 12, Line 43- Col. 13, Line 27); resuming sequential selection of the plurality of antennas after the data block is retransmitted through the second one of the plurality of antennas (antenna selection returns to initial state of selecting first antenna, Col. 11, Line 47 - Col. 12, Line 5) and transmitting additional data blocks through the sequentially selected antennas (data transmitted and when retransmission needed antennas are switched, Col. 12, Line 43- Col. 13, Line 27), which enables the best antenna to be used in transmitting data.

6. In an analogous art, Eastmond et al. discloses using a consecutive sequence of additional data (Col. 9, Lines 33-36), which enables proper reassembly of data blocks (Col. 9, Lines 33-36).

7. It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a consecutive sequence of additional data to ensure proper reassembly of data blocks (Col. 9, Lines 33-36).

8. It would also have been obvious to one having ordinary skill in the art at the time of invention was made to retransmit data, resume antenna selection, and to transmit the data through the antennas sequentially in order to allow the best antenna to be used for transmitting data.

9. Regarding Claim 2, Hiramatsu et al. further discloses the first error signal indicates whether a receiver correctly received the data transmitted through the first one of the plurality of antennas (communication terminal sends to the base station a request for retransmission, Col. 6, Lines 41-54).

10. Regarding Claim 4, Hiramatsu et al. discloses receiving a response signal from the receiver however, Hiramatsu et al. fails to disclose the first error signal is a non-acknowledgement signal transmitted from a receiver.

11. In an analogous art, Eastmond et al. discloses the first error signal is a non-acknowledgement signal transmitted from a receiver (transmit NAK, Col. 5, Lines 56-57), which enables a standard ARQ system.

12. It would have been obvious to one having ordinary skill in the art at the time of invention was made to return a non-acknowledgement signal in order to follow standard operations of an ARQ system which is disclosed as in use by Hiramatsu et al. and Eastmond et al.

13. Regarding Claims 6, Hiramatsu et al. further discloses transmitting data through the second antenna, however Hiramatsu et al. fails to disclose using a consecutive sequence of additional data.

14. In an analogous art, Eastmond et al. discloses using a consecutive sequence of additional data (Col. 9, Lines 33-36), which enables proper reassembly of data blocks (Col. 9, Lines 33-36).

15. It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a consecutive sequence of additional data to ensure proper reassembly of data blocks (Col. 9, Lines 33-36).

16. Regarding Claim 7, Hiramatsu et al. further discloses an antenna selection system including transmitting a data block through a first one of a plurality of sequentially selected antennas (Col. 1, Lines 25-30, Fig. 1), receiving a first signal indicating that an error occurred during transmission or reception of the data block (Col. 6, Lines 41-54), interrupting sequential selection of the plurality of antennas to select a second one of the plurality of antennas in response to the first error signal and retransmitting the data block through the second one of the plurality of antennas (base station performs antenna change control, Col. 6, Lines 41-54), however Hiramatsu et al. fails to disclose performing the same for a second error signal and transmitting back to the first antenna.

17. It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the same for a second error signal and transmitting back

to the first antenna, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

18. Regarding Claim 11, Hiramatsu et al. further discloses transmission and retransmission of the data block are downlink transmissions (Col. 1, Lines 25-30).

19. Regarding Claim 12, Hiramatsu et al. discloses transmission and retransmission of the data block occurs through a mobile communication system (Col. 3, Lines 30-34).

20. Regarding Claim 15, Hiramatsu et al. further discloses the first error signal is received based on an ARQ from a receiver (ARQ controls, Col. 11, Lines 38-40).

21. Regarding Claim 17, Hiramatsu et al. further discloses sequentially selecting the multiple antennas including the first antenna and the second antenna said sequential selection taking place before the first response signal is checked (Terminal transmits messages to base station and base station sends messages to terminal and after retransmission request then antenna change control is enacted, Fig. 16, Item C).

22. Regarding Claims 19, Hiramatsu et al. further discloses transmitting data through the second antenna however, Hiramatsu et al. fails to disclose using a consecutive sequence of additional data.

23. In an analogous art, Eastmond et al. discloses using a consecutive sequence of additional data (Col. 9, Lines 33-36), proper reassembly of data blocks (Col. 9, Lines 33-36).

24. It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a consecutive sequence of additional data to ensure proper reassembly of data blocks (Col. 9, Lines 33-36).

25. Regarding Claim 20, Hiramatsu et al. further discloses an antenna selection system including transmitting a data block through a first one of a plurality of sequentially selected antennas (Col. 1, Lines 25-30, Fig. 1), receiving a first signal indicating that an error occurred during transmission or reception of the data block (Col. 6, Lines 41-54), interrupting sequential selection of the plurality of antennas to select a second one of the plurality of antennas in response to the first error signal and retransmitting the data block through the second one of the plurality of antennas (base station performs antenna change control, Col. 6, Lines 41-54), however Hiramatsu et al. fails to disclose performing the same for a second error signal and transmitting back to the first antenna.

26. It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform the same for a second error signal and transmitting back to the first antenna, since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

27. Regarding Claim 24, Hiramatsu et al. further discloses transmission and retransmission of the data block are downlink transmissions (Col. 1, Lines 25-30).

28. Regarding Claim 27, Hiramatsu et al. further discloses the first error signal is received based on an ARQ from a receiver (ARQ controls, Col. 11, Lines 38-40).

29. Regarding Claim 28, Hiramatsu et al. discloses receiving a response signal from the receiver however, Hiramatsu et al. fails to disclose the first error signal is a non-acknowledgement signal transmitted from a receiver.

30. In an analogous art, Eastmond et al. discloses the first error signal is a non-acknowledgement signal transmitted from a receiver (transmit NAK, Col. 5, Lines 56-57), which enables a standard ARQ system.

31. It would have been obvious to one having ordinary skill in the art at the time of invention was made to return a non-acknowledgement signal in order to follow standard operations of an ARQ system which is disclosed as in use by Hiramatsu et al. and Eastmond et al.

32. Claims 13, 14, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6600933) in view of Ohashi (US 5799245) and Eastmond et al. (US 6088337) and further in view of Texas Instruments (May 1999, Open Loop Downlink Transmit Diversity for TDD, TSG-RAN WG1 meeting #5).

33. Regarding Claim 13, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose an open loop transmit diversity technique is used to transmit data in the mobile communication system.

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34. In an analogous art, TI discloses an open loop transmit diversity technique is used to transmit data in the mobile communication system (Page 1), which enables the system to follow standards in place formed by 3GPP.

35. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system in order to follow standards in place formed by 3GPP.

36. Regarding Claim 14, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose the open loop transmit diversity technique is a TSTD technique.

37. In an analogous art, TI discloses the open loop transmit diversity technique is a TSTD technique (Page 1), which enables the system to follow standards in place formed by 3GPP.

38. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system with TSTD in order to follow standards in place formed by 3GPP.

39. Regarding Claim 25, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose an open loop transmit diversity technique is used to transmit data in the mobile communication system.

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40. In an analogous art, TI discloses an open loop transmit diversity technique is used to transmit data in the mobile communication system (Page 1), which enables the system to follow standards in place formed by 3GPP.

41. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system in order to follow standards in place formed by 3GPP.

42. Regarding Claim 26, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose the open loop transmit diversity technique is a TSTD technique.

43. In an analogous art, TI discloses the open loop transmit diversity technique is a TSTD technique (Page 1), which enables the system to follow standards in place formed by 3GPP.

44. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system with TSTD in order to follow standards in place formed by 3GPP.

Response to Arguments

45. Applicant's arguments with respect to claims 1, 2, 4, 6, 7, 11-17, 19-20, and 24-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN LIM whose telephone number is (571)270-1210. The examiner can normally be reached on Mon-Thurs 9:00am-4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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